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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/832,825	04/12/2001	Kazunori Kaneda	Q64042	1925

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SUGHRUE, MION, ZINN,
MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037-3202

EXAMINER	
FISCHER, JUSTIN R	
ART UNIT	**PAPER NUMBER**
1733	

DATE MAILED: 06/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/832,825	KANEDA, KAZUNORI	
	Examiner	Art Unit	
	Justin R Fischer	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,16,19 and 20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,16,19 and 20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *04282004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 28, 3004 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 2 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto (US 4,714,734, of record) and further in view of Fukuhara (JP 2000-17115, of record). Hashimoto and Fukuhara are applied in the same manner as set forth in the Final Rejection dated October 28, 2003 (Paragraph 2).

As best depicted in Figure 1, Hashimoto discloses a pneumatic tire construction incorporating (a) at least one composite layer or carcass ply 7 formed of a coating rubber composition and reinforcing cords and (b) at least one squeegee rubber or rubber reinforcing layer S comprising a rubber composition which adjoins to said

composite layer, wherein said rubber reinforcing layer contains an inorganic filler, such as hydrotalcite (Column 10, Lines 25-53 and Column 13, Lines 45-60). While Hashimoto fails to identify a specific tire, one of ordinary skill in the art at the time of the invention would have found it obvious to use the tire design of Hashimoto in the manufacture of heavy-duty tires, it being recognized that the properties of good strength, good appearance, and good processability are desired in a wide variety of tires, including heavy-duty tires (Column 12, Lines 37-44 and Column 9, Lines 15-22). It is noted that the description of a passenger car tire in Column 20, Lines 18-22 is only exemplary- the reference in now way attempts to limit the use of the inventive rubber composition to passenger car tires. It is emphasized that the critical feature of Hashimoto is an inventive rubber composition or squeegee rubber usable in a tire sidewall region that provides the above noted benefits- one of ordinary skill in the art at the time of the invention would have readily appreciated the use of such a rubber composition in a wide variety of tires as the above noted benefits are consistent with those desired in each of the claimed tire types. In this same regard, one of ordinary skill in the art at the time of the invention would have found it obvious to use steel as the carcass reinforcing material since these cords are extensively used in a wide variety of tire carcass plies due to their high strength characteristics. Again, it is emphasized that the critical feature of Hashimoto is not the material used as the carcass reinforcement cord (as evidence by the complete silence regarding the material) but rather a unique rubber composition S that provides good strength, good resistance to hot water, good thermal conductivity, and good processability. As to the quantity of hydrotalcite used,

one of ordinary skill in the art at the time of the invention would have recognized the broad range of the claimed invention as defining well known quantities of inorganic fillers used in tire rubber compositions and thus, it would have been obvious to include hydrotalcite in an amount between 0.1 and 20 phr absent any conclusive showing of unexpected results. It is noted that carbon black is the primary filler in the rubber composition of Hashimoto and is included in a preferred amount between 2 and 100 phr, such that one of ordinary skill in the art at the time of the invention would have readily appreciated and expected the inorganic filler (secondary filler) to be included in a smaller amount and within the broad range of 0.1 and 20 phr. Lastly, as to the specific formula for hydrotalcite, Fukuhara evidences that the claimed formula is consistent with that which is commonly used, particularly in tire rubber compositions.

With respect to claim 19, Hashimoto suggests that the squeegee rubber includes organic rubbers, such as natural rubber and isoprene rubber, in an amount that satisfies the claimed range of greater than or equal to 50% of the total weight (Column 5, Line 66 – Column 6, Line 21).

4. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto and Fukuhara as applied in claim 2 above, respectively, and further in view of Kobayashi (US 5,965,640, of record), Nosu (US 5,464,896, of record), and the Admitted Prior Art (Page 5, Lines 13-15).

As previously stated, Hashimoto in view of Fukuhara teach a tire construction comprising a composite layer and an adjacent squeegee rubber containing a hydrotalcite reinforcing material. The references, however, are silent as to what specific

type of hydrotalcite is used. In any event, one of ordinary skill in the art at the time of the invention would have found it obvious to use hydrotalcite in which the crystal water has been removed since such a material is commonly used in a wide variety of industries. For example, Kobayashi (Column 13, Lines 5-10) and Nosu (Column 2, Line 42 – Column 3, Line 15) illustrate the extensive use of hydrotalcite in which the crystal water had been removed, it being particularly noted that Kobayashi is directed to the use of such a material in a rubber composition. Also, the Admitted Prior Art discloses that the claimed hydrotalcite was purchased from Kyowa Chemical Industry, Co., Ltd, further suggesting that hydrotalcite with crystal water removed was a well known material prior to the date of the claimed invention. As such, one of ordinary skill in the art at the time of the invention would have found it obvious to use hydrotalcite having no crystal water in the squeegee rubber composition of Hashimoto. Lastly, applicant has not provided a conclusive showing of unexpected results to establish a criticality for the use of such a hydrotalcite.

5. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto and Fukuhara as applied in claim 2 above and further in view of Masson (WO 99/24502, newly cited). As noted above, the squeegee rubber composition of Hashimoto is disposed adjacent the carcass ply and includes an inorganic filler in the form of hydrotalcite. As is conventional in tire rubber compositions, Hashimoto suggests the inclusion of additives, such as vulcanization aids, processing aids, and the like (Column 10, Lines 54-58). While Hashimoto fails to expressly discuss the inclusion of a metal salt, one of ordinary skill in the art at the time of the invention would have

found it obvious to include a metal salt as they represent well known additives that are extensively used in a variety of tire rubber compositions, as shown for example by Masson (Page 1, 5th Paragraph – Page 2, 1st Paragraph). It is particularly noted that the background of Masson specifically details the known use of metal salts in squeegee rubber compositions in order to reduce the effects of oxidation in an adjacent composite layer. Absent any conclusive showing of unexpected results, the inclusion of a metal salt in the squeegee rubber composition of Hashimoto would have been well within the purview of one of ordinary skill in the art at the time of the invention.

Response to Arguments

6. Applicant's arguments filed April 28, 2004 have been fully considered but they are not persuasive. Applicant argues that Hashimoto is directed to passenger car tires, which contain polyester or rayon cords as opposed to the claimed steel cord construction. Applicant further contends that the prior art does not teach or suggest a relationship between the inclusion of hydrotalcite and the adhesion between the steel cord and the coating/topping rubber. Lastly, applicant argues that the examiner has not set forth a motivation to use a hydrotalcite in which the crystal water has been removed.

Regarding the tire size, as noted above, the squeegee rubber composition of Hashimoto is not described as usable only in a passenger car tire- the lone example of Hashimoto is exemplary and it is clear in view of the associated benefits that one of ordinary skill in the art at the time of the invention would have been motivated to form a wide variety of tires with the squeegee rubber composition of Hashimoto. It is emphasized that there is nothing in Hashimoto that teaches away from the manufacture

of a heavy-duty or off-road tire. In fact, the benefits of good ozone resistance, weatherability, heat resistance, flex cracking resistance, and mechanical strength are desirable in nearly every single tire construction. In this same regard, one of ordinary skill in the art at the time of the invention would have found it obvious to use steel in the carcass plies as it represents an extremely well known and extensively used carcass reinforcing material in a wide variety of tires. While polyester or rayon might be more common in passenger car tires, the squeegee rubber composition of Hashimoto is by no means restricted to such a tire construction.

In response to applicant's argument that the prior art does not recognize the relationship between the inclusion of hydrotalcite and the adhesion level, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). It is emphasized that the squeegee rubber composition of Hashimoto does include hydrotalcite and thus, the benefits of improved adhesion would be expected to be present in the tire construction of Hashimoto. Furthermore, as stated in Paper Number 9, Paragraph 9, the results of Table 2 are not persuasive since the quantity of magnesium oxide and hydrotalcite is varied between rubber compositions and as such, it is unclear if the realized benefits should be attributed to the quantity of the inorganic filler or the specific inorganic filler. This point is especially true in light of the comparison of Examples 1 and 4, wherein the composition having magnesium oxide (Example 4) provides improved resistance to adhesion loss as compared to the composition having

hydrotalcite (Example 1). The Examples 1-4 suggest that the relevant factor in determining the degree of resistance to adhesion loss is the amount of inorganic filler and not the specific inorganic filler.

As to the specific type of hydrotalcite, Kobayashi, Nosu, and the Admitted Prior Art recognize the well-known use of hydrotalcite in which the crystal water has been removed. In particular, Kobayashi is specifically directed to the inclusion of such a hydrotalcite in a rubber composition. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to include such a hydrotalcite in the squeegee rubber composition of Hashimoto- it is emphasized that hydrotalcite without crystal water represents a common form of hydrotalcite in a variety of industries, including the rubber industry.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Justin Fischer

June 15, 2004

JEFF H. AFTERGUT
PRIMARY EXAMINER
GROUP 1300